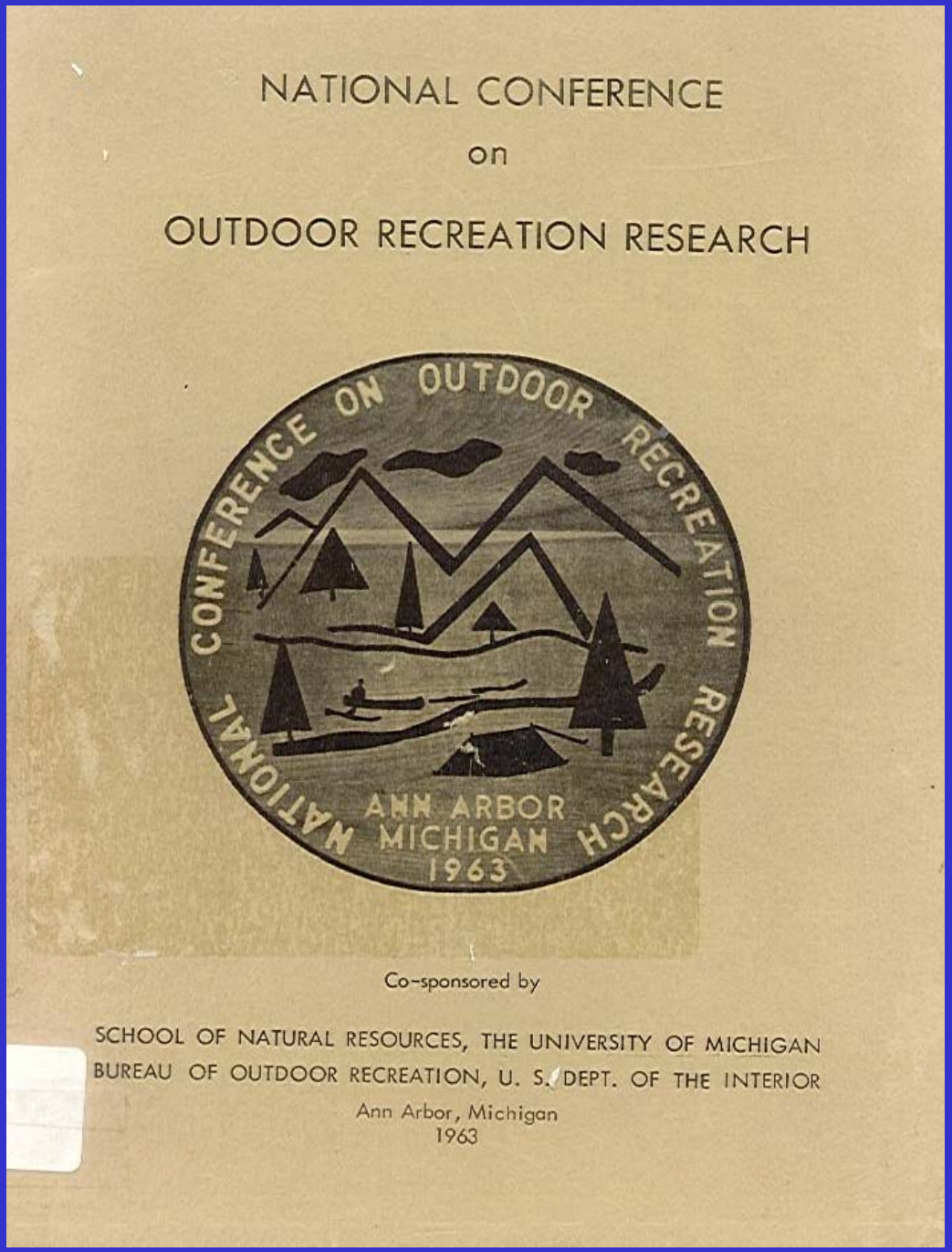
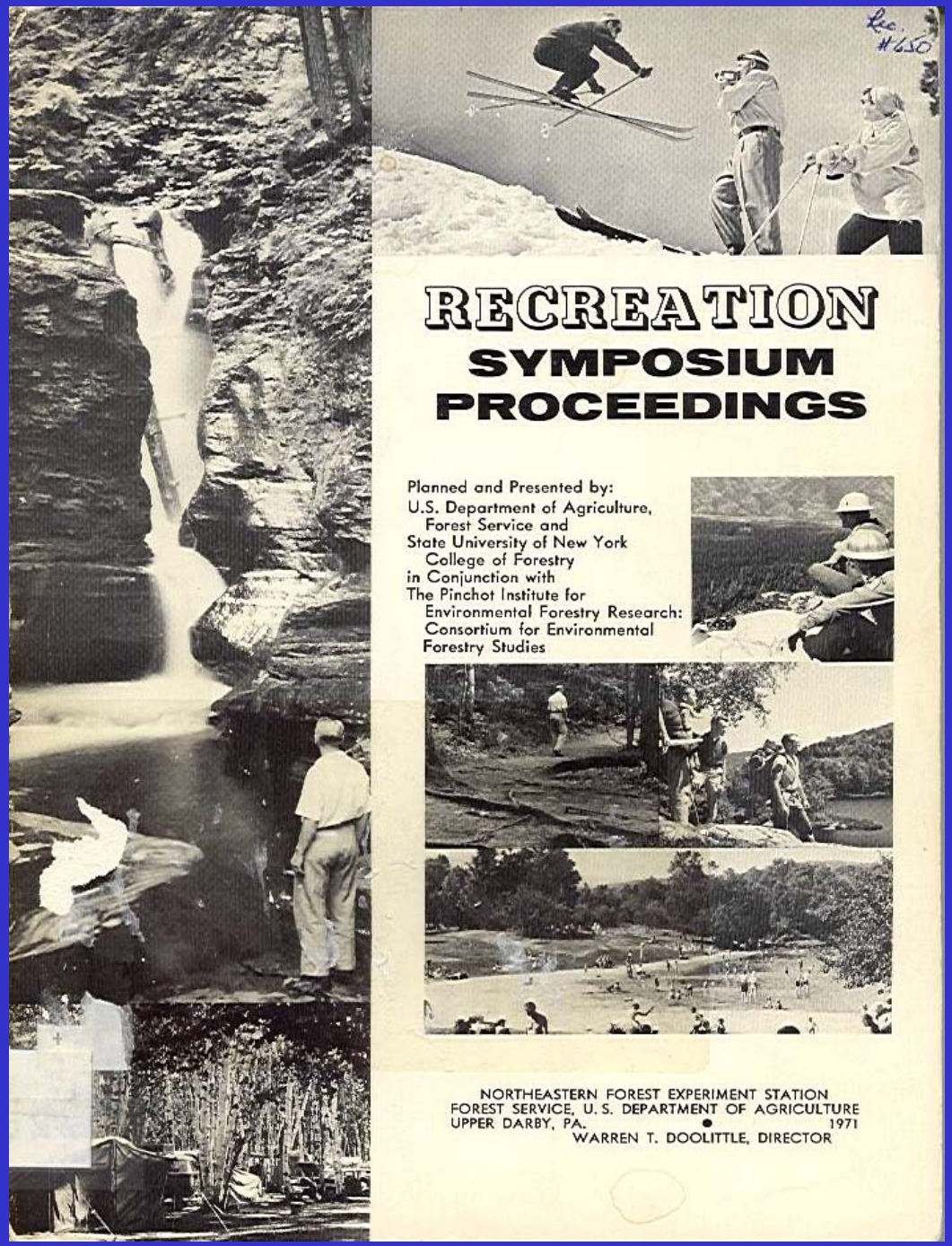
A HISTORY OF RECREATION RESEARCH IN THE SOUTHEAST

FROM THE LATE 1950s TO NOW

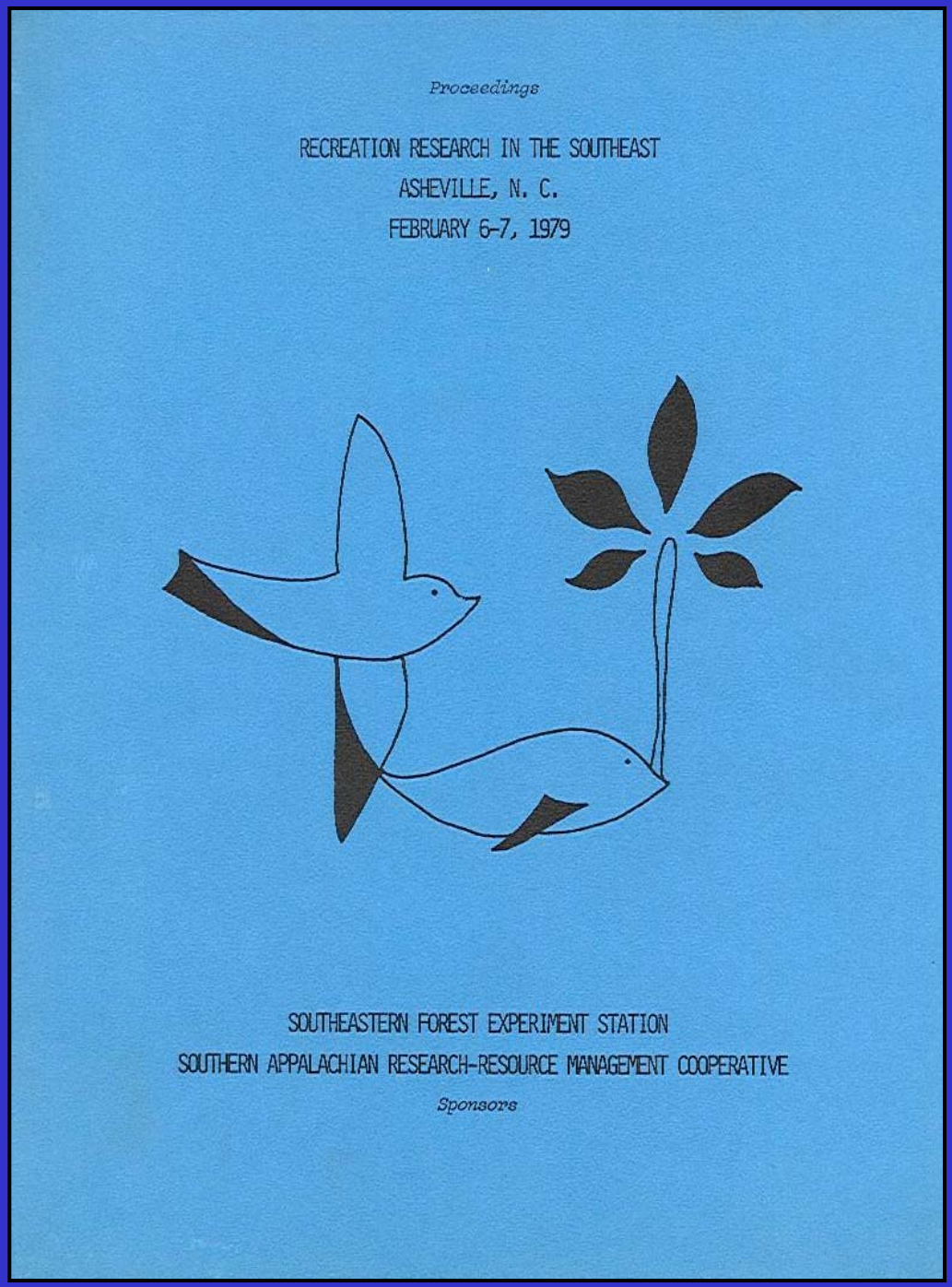
One of the first outdoor recreation research conferences—the University of Michigan stepped up the pace in research in the 60s



Research on outdoor recreation became a significant component of Forest Service research in the late 1960s and 1970s. Several prominent conferences were organized.



The first SERR conference was held in Asheville, NC, at this very hotel, 2nd floor, 25 years ago. McLellan, Hendee, McCrone, Cordell and others organized it.



Proceedings

RECREATION RESEARCH IN THE SOUTHEAST

FEBRUARY 6-7, 1979 ASHEVILLE, N. C.

SOUTHEASTERN FOREST EXPERIMENT STATION

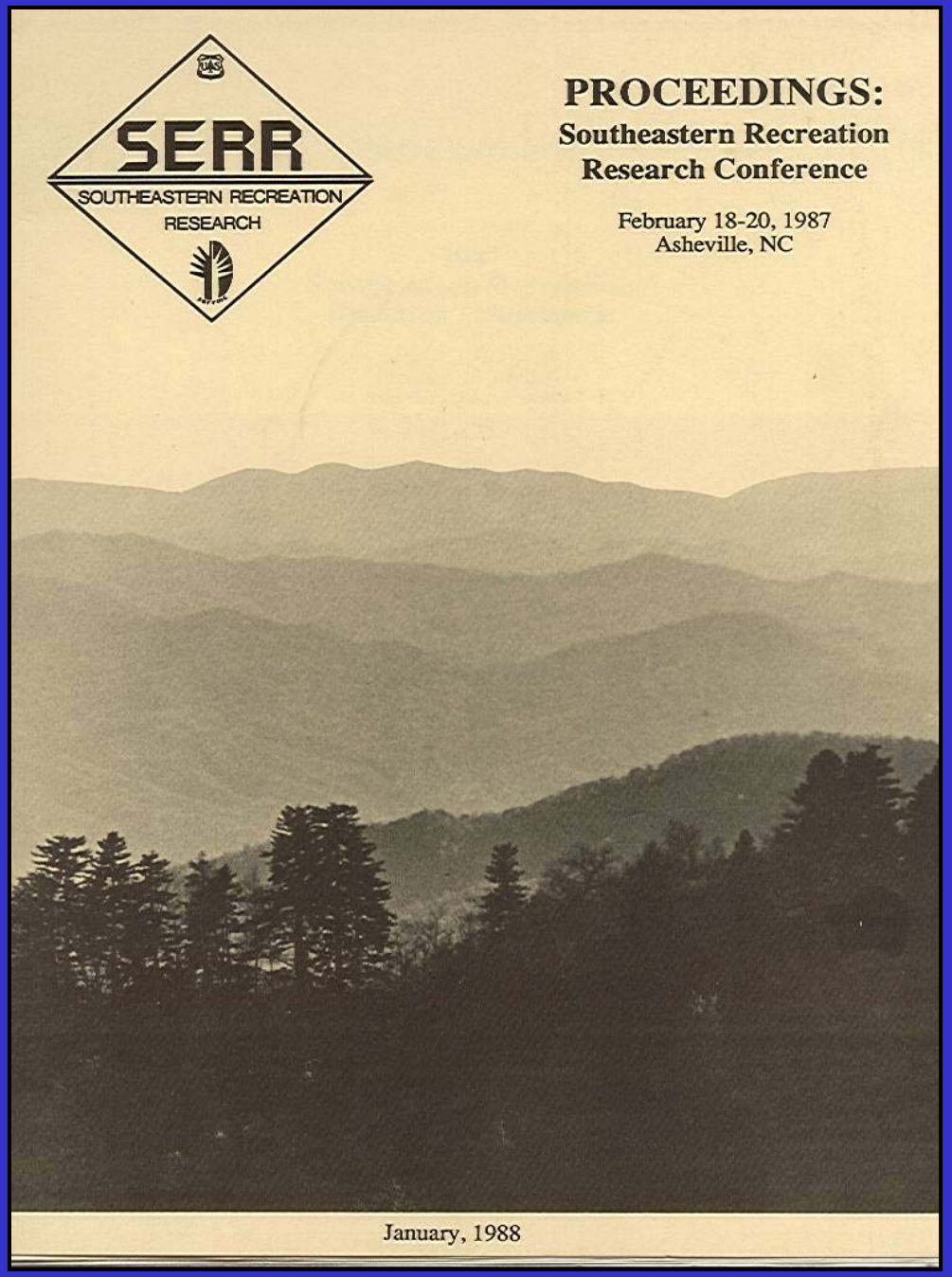
SOUTHERN APPALACHIAN RESEARCH-RESOURCE MANAGEMENT COOPERATIVE

Sponsors

TABLE OF CONTENTS

A mixture of researchers, managers and some users attended that first conference. The Forest Service for some years published proceedings.

The SERR Proceedings were a primary source for tracking the history of recreation research in the Southeast.



PROCEEDINGS

1987 Southeastern Recreation Research Conference

February 18-20, 1987
Asheville, North Carolina

1987 Conference Director
Alan E. Watson
Georgia Southern College

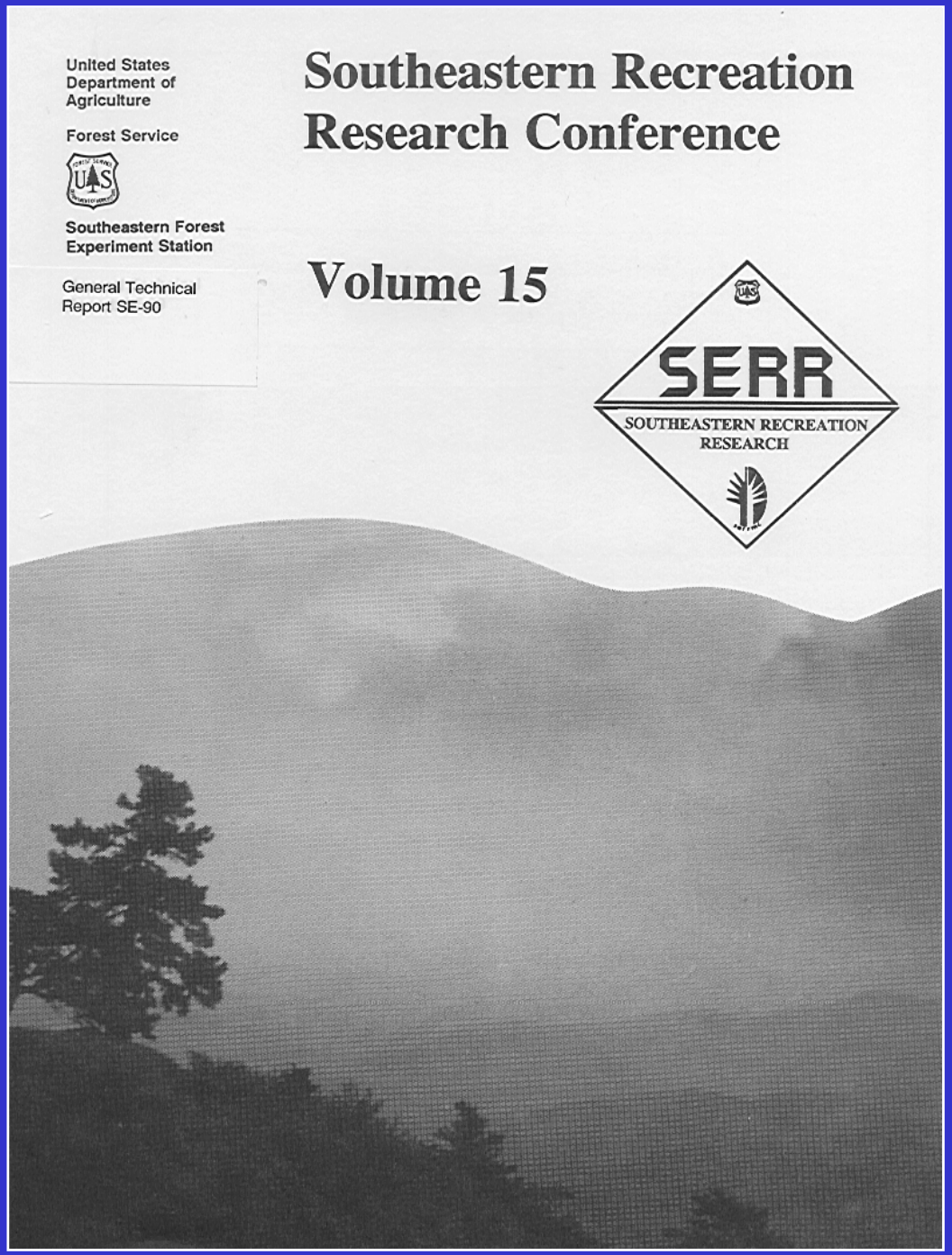
Editor
James D. Absher
University of Georgia

Produced by
Department of Recreation and Leisure Studies
University of Georgia
Athens,GA 30602

January, 1988

CONTENTS

The Forest Service, with guest editors, continued to publish SERR Proceedings well into the 1990s. The research reported in those proceedings left quite a legacy.



Proceedings

1993
Southeastern Recreation Research Conference
Volume 15

February 10-12, 1993
Helen, Georgia

Editor
Howard A. Clonts
Auburn University

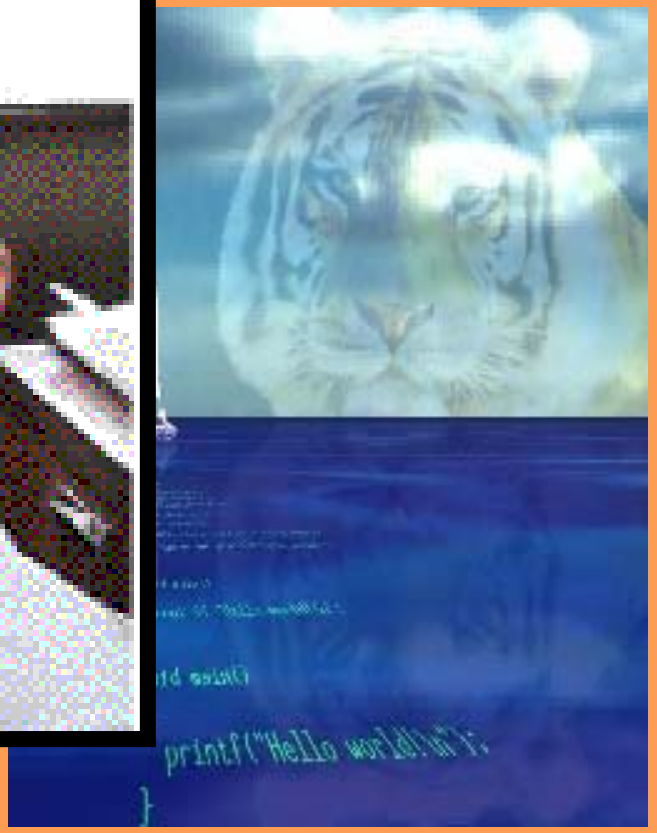
Published by
USDA Forest Service
Southeastern Forest Experiment Station

December 1994

Table of Contents

There was always an effort given to including a broad representation of agencies and universities in the SERR Conference.

CLEMSON
UNIVERSITY



BILL HAMMITT

CLEMSON

UNIVERS

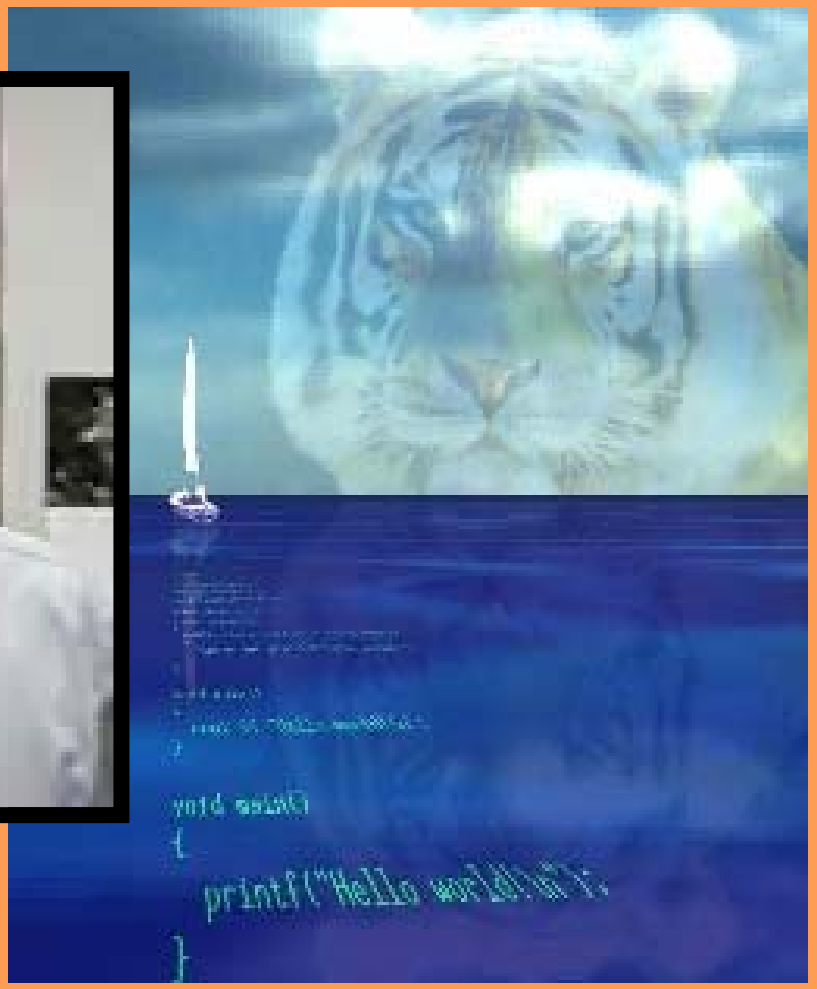
GINA McLELLAN

CLEMSON
UNIVERSITY

HERB STEVENS

CLEMSON

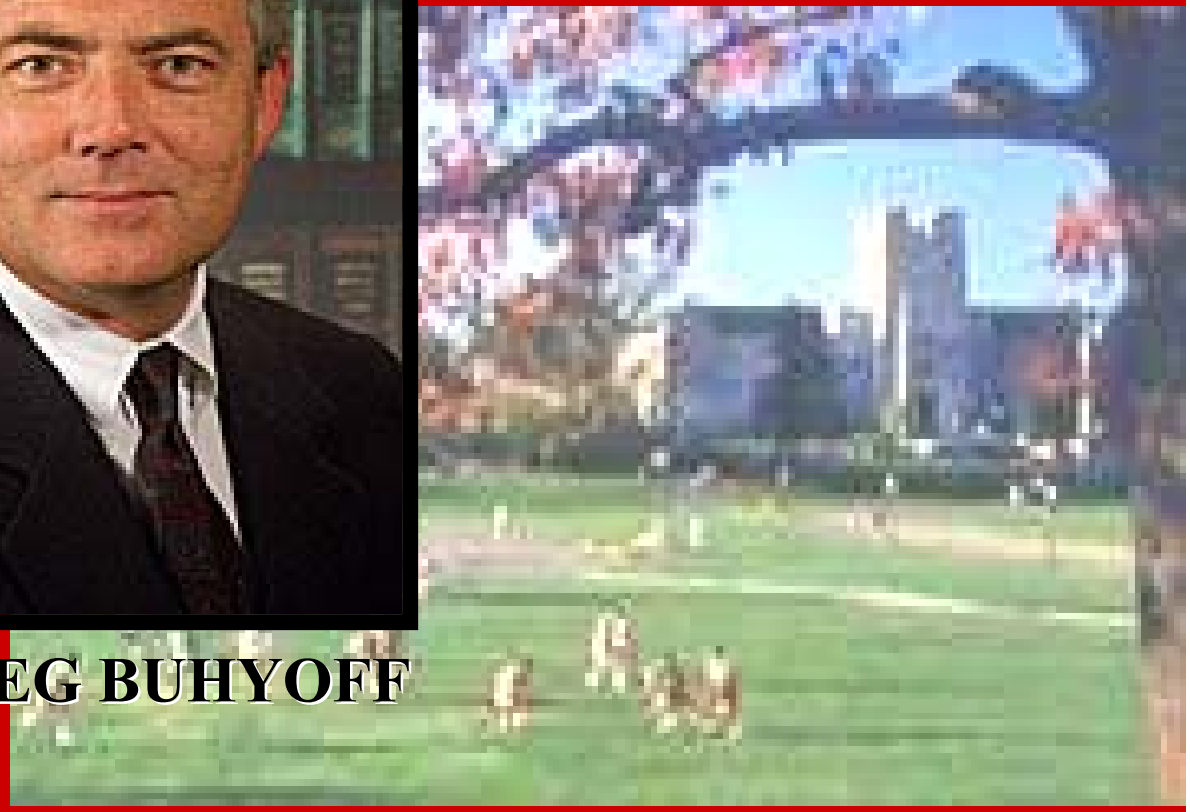
UNIVERS



ROB BIXLER

Virginia Tech

Virginia Polytechnic Institute and State University



GREG BUHYOFF

Virginia Tech

Virginia Polytechnic Institute and State University

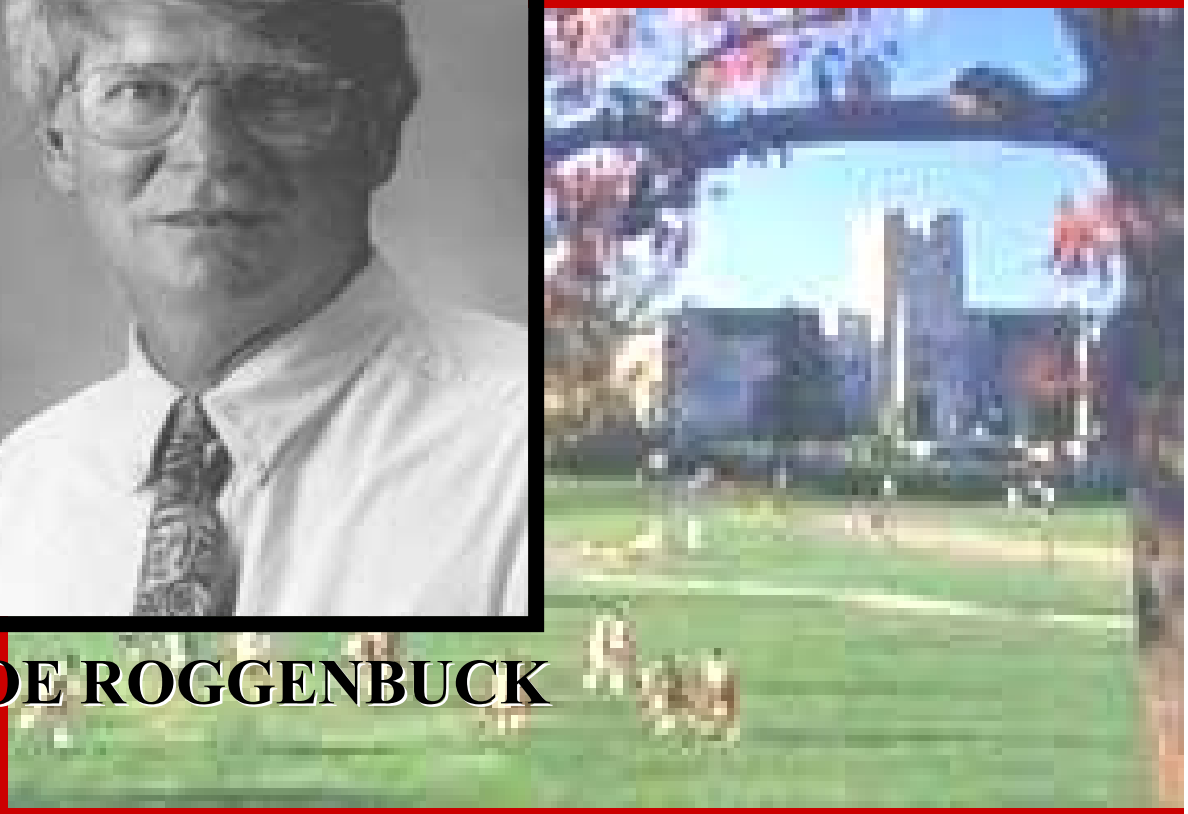
BRUCE HULL

Virginia Tech

1872

Virginia Polytechnic Institute and State University

JOE ROGGENBUCK



NC STATE UNIVERSITY

CHRYS SIDERELIS

NC STATE UNIVERSITY

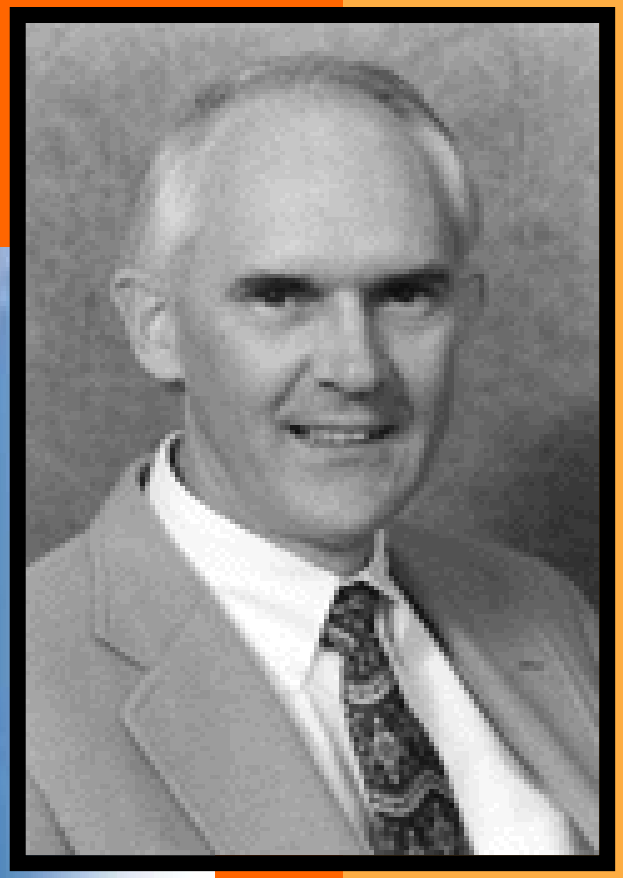
BETH WILSON

NC STATE UNIVERSITY

HUGH DEVINE

NC STATE UNIVERSITY

Virginia Tech
1872
Virginia Polytechnic Institute and State University

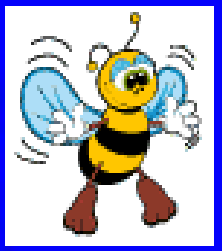


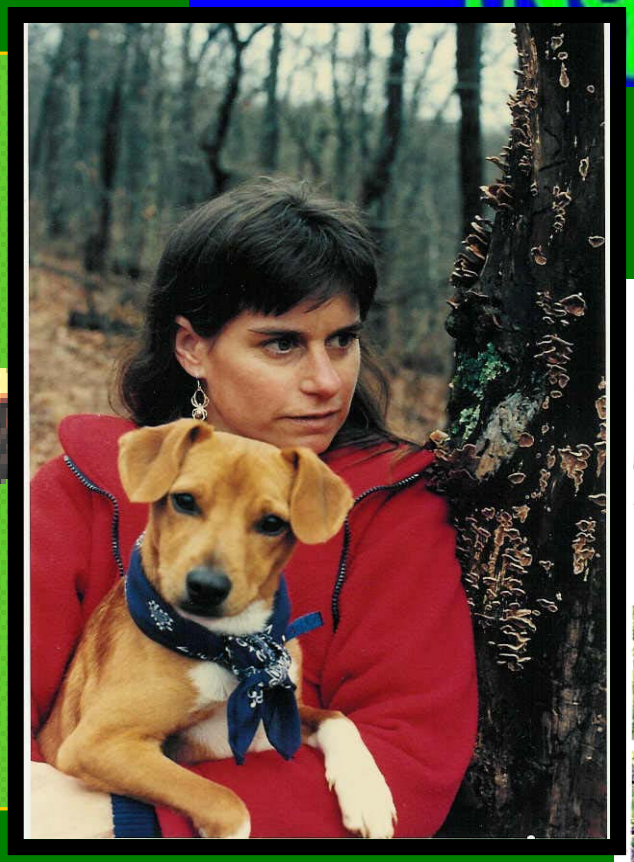
DOUG WELLMAN

Research & Development

USDA Forest Service

Natural Inquirer





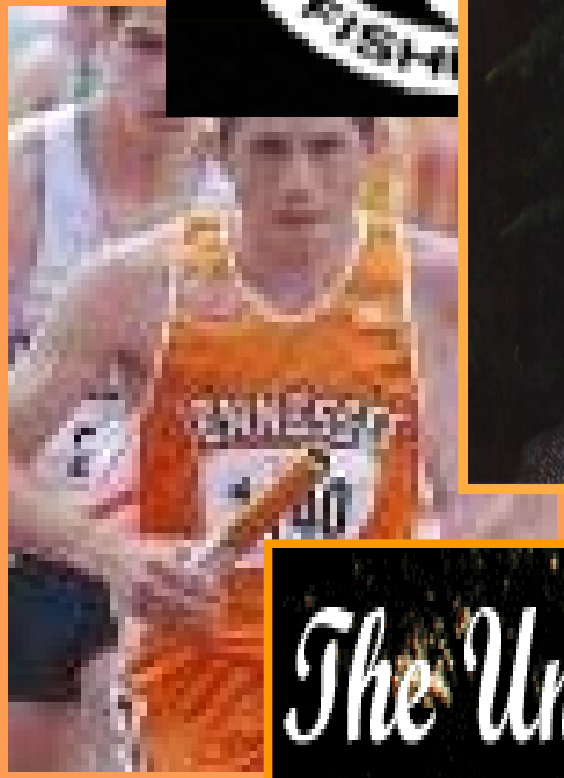
Barbara McDonald

university of tennessee
COLLEGE of AGRICULTURAL SCIENCES & NATURAL RESOURCES

BECKY STEPHENS

The University of Tennessee

university of tennessee
COLLEGE of AGRICULTURAL SCIENCES & NATURAL RESOURCES



MARK FLY

The University of Tennessee

A UNIT OF THE UNIVERSITY OF GEORGIA

WARNELL SCHOOL OF FOREST RESOURCES

Mike Tarrant

University of *Georgia*

1785

The University of Georgia

CAES

College of Agricultural & Environmental Sciences

John Bergstrom

University of  *Georgia*

FOREST SERVICE

NC STATE UNIVERSITY

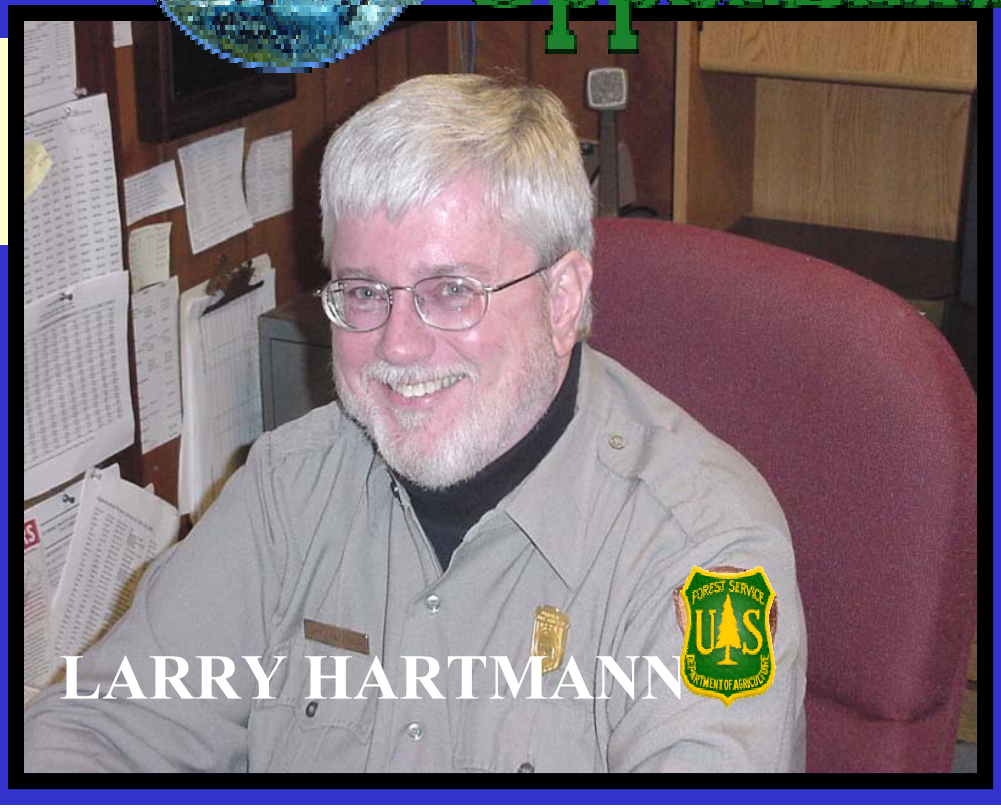
YOURS TRULY

The National Park Service

Recreational Opportunities

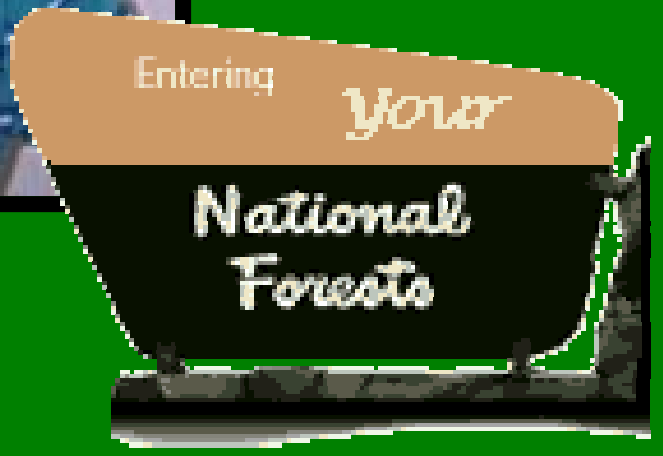
Experience Your America
NATIONAL PARK SERVICE

GREAT SMOKY MOUNTAINS NATIONAL PARK



FOREST SERVICE

DON ENGLISH

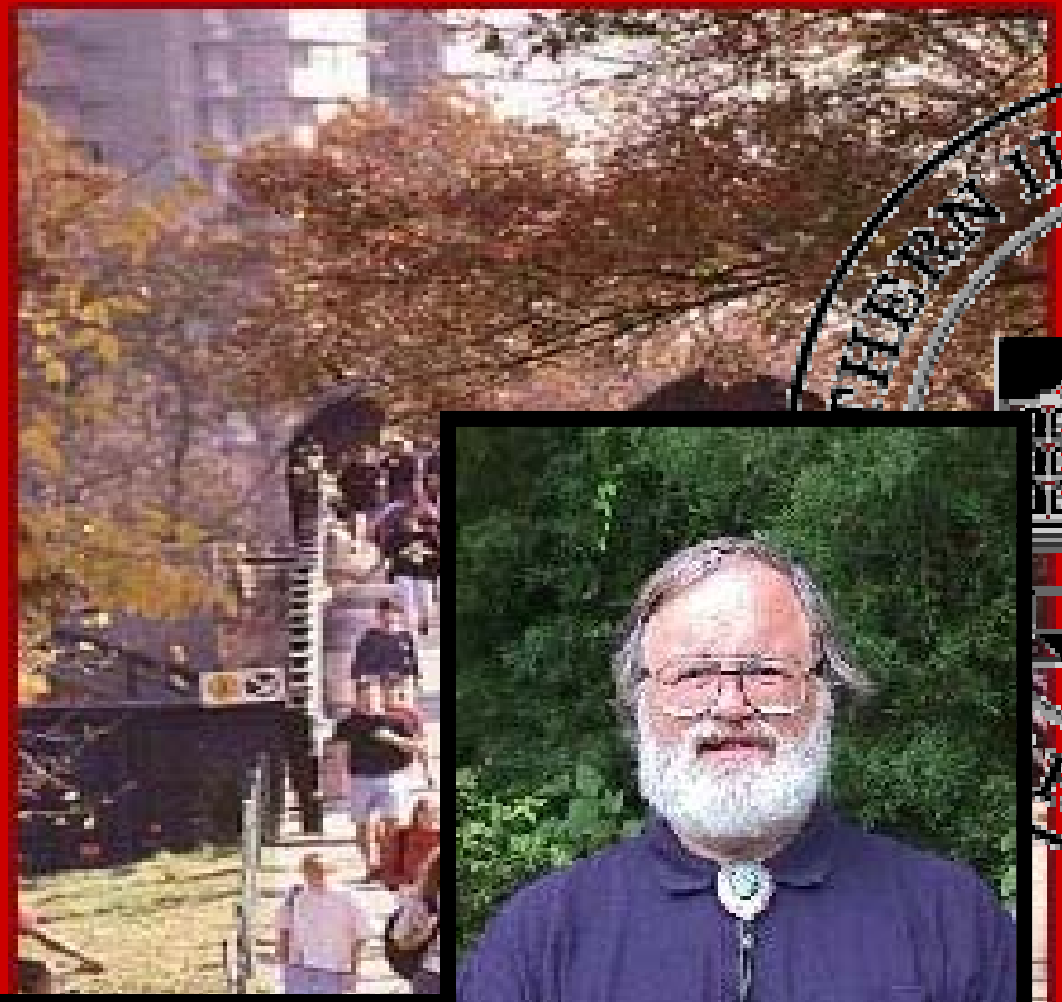


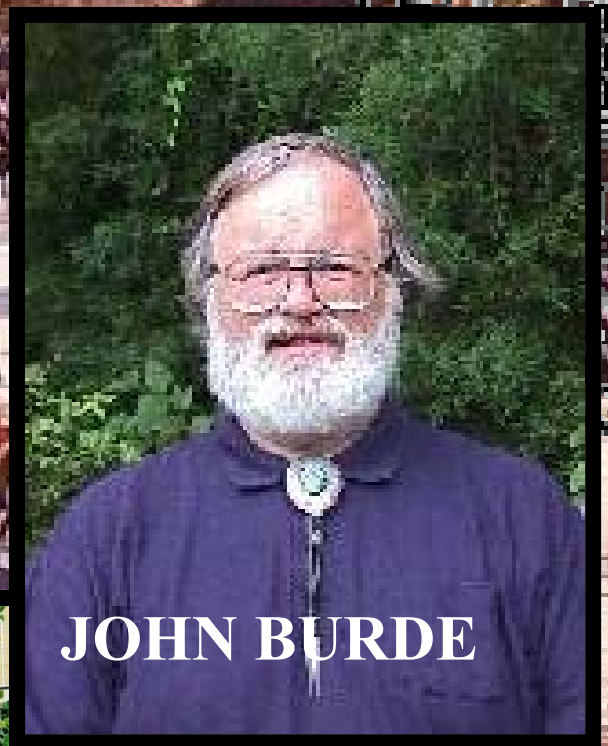
FOREST SERVICE

CARTER BETZ

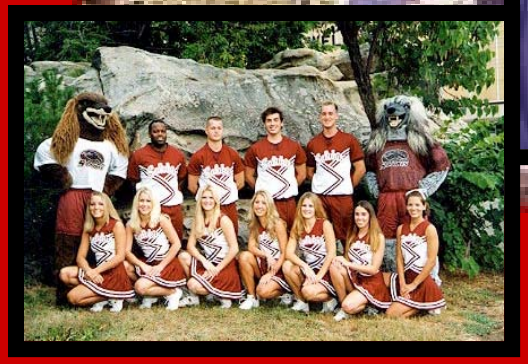
FOREST SERVICE

ALAN WATSON





JOHN BURDE

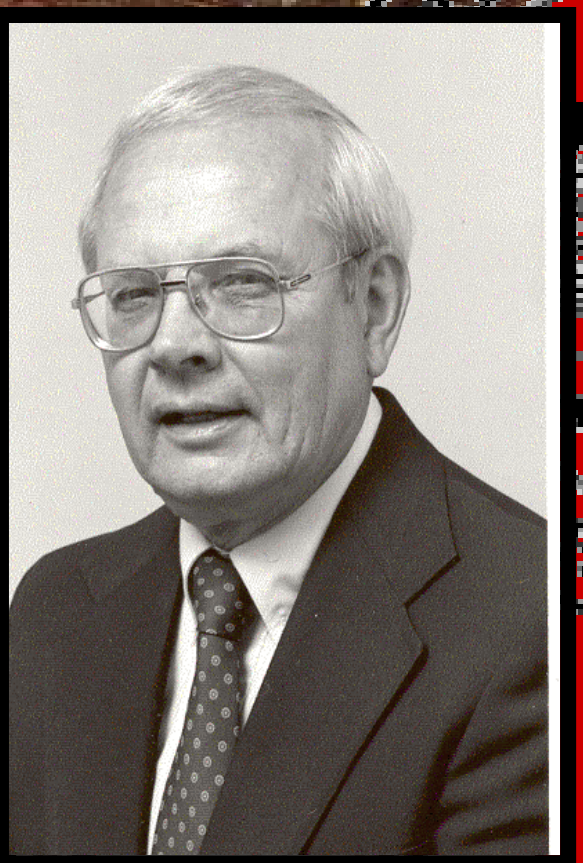


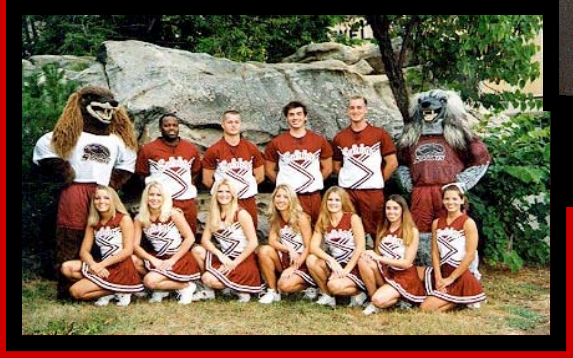
EASTERN ILLINOIS UNIVERSITY

CHARTERED 1895

SIU

SOUTHERN ILLINOIS UNIVERSITY
Carbondale





KEN CHILMAN

SIU

Southern Illinois University
Carbondale

HOWARD CLONTS

A THUMBNAIL HISTORY OF OUTDOOR RECREATION RESEARCH IN THE SOUTHEAST

Historical Overview of Outdoor Recreation Research

Prior to the Outdoor Recreation Resources Review Commission (ORRRC), which started its work in 1958 and published its results in 1962, very little recreation research had been done anywhere in the country, especially in the South. In fact, prior to World War II, there was little policy or management emphasis, let alone research, applied to recreational uses of natural lands.

As demand for outdoor recreation grew after the "war years", however, and as the U. S. economy rebounded from the war's impacts, participating in outdoor activities and taking outdoor-oriented family vacations grew rapidly. That growth sparked creation of the ORRRC and gave national attention to the need for research to better understand the implications of this fast-growing phenomenon.

➡ **As of 1962, there were 6 known outdoor recreation research studies in progress by university faculty and graduate students in the South. At this time, a number of university park and recreation administration academic departments were creating outdoor recreation curricula throughout the region. Examples in this region included Clemson University, North Carolina State University, the University of Arkansas, and Texas A&M University.**

➡ **The national visibility of ORRRC Reports gave energy and justification to emerging programs and to building research capacity. In the early years, outdoor recreation research was underway at the universities of Florida, Arkansas, Georgia and Virginia Polytechnic Institute. Topics ranged from income earning potentials of outdoor recreation in rural areas, to management evaluations of national forests, and to recreation use estimation procedures (Graves 1963)**

As with the universities in the South, government agencies were just beginning to institute recreation research into their programs. The USDA Forest Service and Economic Research Service were two of the earliest agencies known to establish a recreation research presence in the South (van der Smissen 1963) and elsewhere in the country.

The few scattered publications beginning to emerge from the Forest Service, primarily the Southeastern Forest Experiment Station with headquarters in Asheville, NC, covered use impacts on developed recreation sites, hunting and fishing use, private land access issues and how to include recreation in forest management planning.

Research in the South from the late 1950s up through the 1980s

Four major recreation topic areas were emphasized:

- **On-site use estimation**
- **Visitor profiles and preferences**
- **Use impacts and carrying capacity**
- **Large-scale assessments**
- **Other topics such as economic impacts and private land recreational access**

Primary sources for these overviews are the proceedings of conferences, literature indexes that Interior used to do, and, as well, limited personal communication

On-Site Use Estimation—Developed Sites

Research sought to develop reliable and cost effective methods for developed sites in the early years of recreation research (James et al 1971). Methods were designed and tested to produce estimates of amount of use by activity on developed sites, such as campgrounds, and day-use sites, such as swimming beaches. In addition to sampling site use, correlated measures such as traffic flow counts or water usage were correlated to allow updates of initial on-site count estimates.

Advancements in these early years included correlating traffic flows using one or more traffic counters with simultaneous samples of different recreation activities and affiliated sites for ultimately deriving estimates of total area-wide use by type and by site.

On-site use estimation—Developed Sites

Recent work pertaining to estimating use of developed sites has focused on applying early technology for mandated reporting at national, regional and management unit levels by the Forest Service and other agencies. In the South and nationwide, the Park Service, Corp of Engineers and the Forest Service have in place advanced systems for estimating use by type of activity and season of the year.

Based largely on early research done in the South by James and his associates at the Southeastern Forest Experiment Station, the Forest Service assembled a Guidebook on Techniques and Equipment for Gathering Visitor Use Data on Recreation Sites (Yuan 1995).

Estimating use in dispersed areas and wilderness

In the late 1950s, the U. S. Forest Service organized and staffed a number of forest recreation research units around the country. Fourteen problem areas were identified as high priority for these research units (Van der Smissen 1963). Of these 14 problem areas, one was "Determination of techniques and procedures for measuring forest recreation use".

The newly formed unit at the Southeastern Forest Experiment Station (SEFES), mentioned just above, was ultimately assigned the lead in developing and testing methods for estimating forest recreation use. The most challenging problem facing this unit was that of conceptualizing approaches for sampling and estimating use in dispersed forest areas.

Dispersed areas (including designated wilderness) include large bodies of water, roads and trails, natural lakes, rivers, open range, and general forest areas. Use of such areas is typically of low intensity and highly dispersed, thus making it difficult and costly to sample.

Examples of dispersed activities include hiking, backpacking, birding, driving forest roads, and fishing. One of the first published studies of dispersed use was done by Cushwa and McGinnes (1964)

Work in development of estimation techniques after the retirement of James in 1974 was sparse, largely carried on by Cordell, who took over as Project Leader in 1976. One advancement was testing and refining the use of directional traffic circuits using dual input, time-interval recorders in forested areas with multiple entry and exit roads (Erickson and Lui 1982).

Visitor Profiles and Preferences

The need to know the visitor underlay many studies in outdoor recreation in the late 1950s and 1960s. The work of the Outdoor Recreation Resources Review Commission pointed out just how little was known at that time (ORRRC 1962). Use estimation studies usually devoted some peripheral attention to describing the visitors and their preferences for amenities, facilities and services. But the results were far from adequate.

Other agencies at that time in the South doing some research in the area of forest visitor characteristics and preferences included the National Park Service, the Tennessee Valley Authority, the Fish and Wildlife Service, the Corps of Engineers and numerous state agencies.

Water Recreation Users

River floating and running were a fast growing interests in the 1970s and into the 1980s. A number of studies examined river floaters including kayakers, canoers, rafters, inner tube floaters and swimmers. One such study looked at the characteristics and wild river management preferences of Chattooga River users (Howard, Bethea. Keger and Richardson 1977).

In another Chattooga River study, users were found to be around 30 years old, to have had some college education, to be mostly in white collar occupations, to be 2/3 male, and to have had a number of previous river recreation experiences (Townsend and Tarbet 1982). River users were not unlike other recreation users in that they preferred clean and safe recreation settings with minimal crowding, good access to areas and facilities and lack of inter-user conflicts.

Use Impacts and Carrying Capacity Studies

As federal and state agencies became more engaged in recreation management through the 1950s and 1960s, and as use levels rose, greater attention was paid to the impacts of repeated use on the vegetation, soils and other conditions of recreation sites.

In a number of studies, both the deteriorating condition of developed campsites and results of tests of rehabilitation options were examined. In one study (Talhelm 1969), trial plantings of various species of turf grass indicated that such practice would be ineffective for widespread application aimed at improving deteriorated recreation sites. Soon after reopening the test sites to use it was found that all varieties of planted grasses were suffering badly from trampling associated with site use.

In another study, small trees and shrubs were planted on recreation sites to see if they would grow and provide visual barriers and vegetative cover (Cordell and James 1971).

Other use impact work focused on the effects of use on trails and forest conditions in general.

Saunders (1977) studied the effects of recreational disturbance on Southern Appalachian spruce-fir forests, which were then and continue to be under pressure from insect, disease , air pollutant and recreation use factors. Saunders (1979) further studied vegetation cover differences of randomly selected forest plots with and without recreation use to see if there were significant differences. Plots with use showed impacts on vegetation and soil condition.

Lockaby and Dunn (1977) examined the impacts of sustained recreation use, but mostly focused on forest soil properties. Whittaker (1978) compared the surface impacts of hiking and horseback riding in the Great Smoky Mountain National Park and found them to be significant when considered on a per-unit-of-use basis.

Carrying Capacity

Beyond site use impact research, little work was done on site and area capacity in the South in the decade of the 1960s. Research had pointed out that the essential ingredients of capacity decisions were knowing the interrelationships between management objectives, user attitudes, user preferences and site use impacts (Lime 1976). Although not based on work done in the South, some of the most definitive carrying capacity work came from LaPage (1963) and Wagar (1964). Not until the late 1960s and 1970s did recreation carrying capacity work again assume a high profile.

In 1974, Hammon et al at NC State (1974a) began publishing on capacity of water-based recreation systems. In 1974 they published a systems-approach to capacity management of water recreation systems (Hammon et al 1974b)

More on Capacity Research

Other, more basic research was being conducted to better define the concept of carrying capacity and its theoretical foundations. For example, Schreyer and Roggenbuck (1978) examined the influence of experience expectations on perceptions of crowding as related to the notion of social-psychological carrying capacity of forest recreation areas.

Noe, Hull, and Wellman (1982) examined normative responses and norm activation among off road vehicle users within a managed seashore recreation environment.

Bryan (1979) studied and published on potentials of use conflicts in outdoor recreation as a consideration in capacity planning.

Capacity research in the South was spotty through the 1980s

Chilman (1989) was a leader in advancing the principles of and developing tools for analyzing capacity questions. His work advanced the concept that capacity is a desired set of conditions that emphasize quality factors. He developed and published a revised carrying capacity analysis system.

Chilman's work contributed significantly to the evolving concept of Limits of Acceptable Change (Stankey, et al 1985).

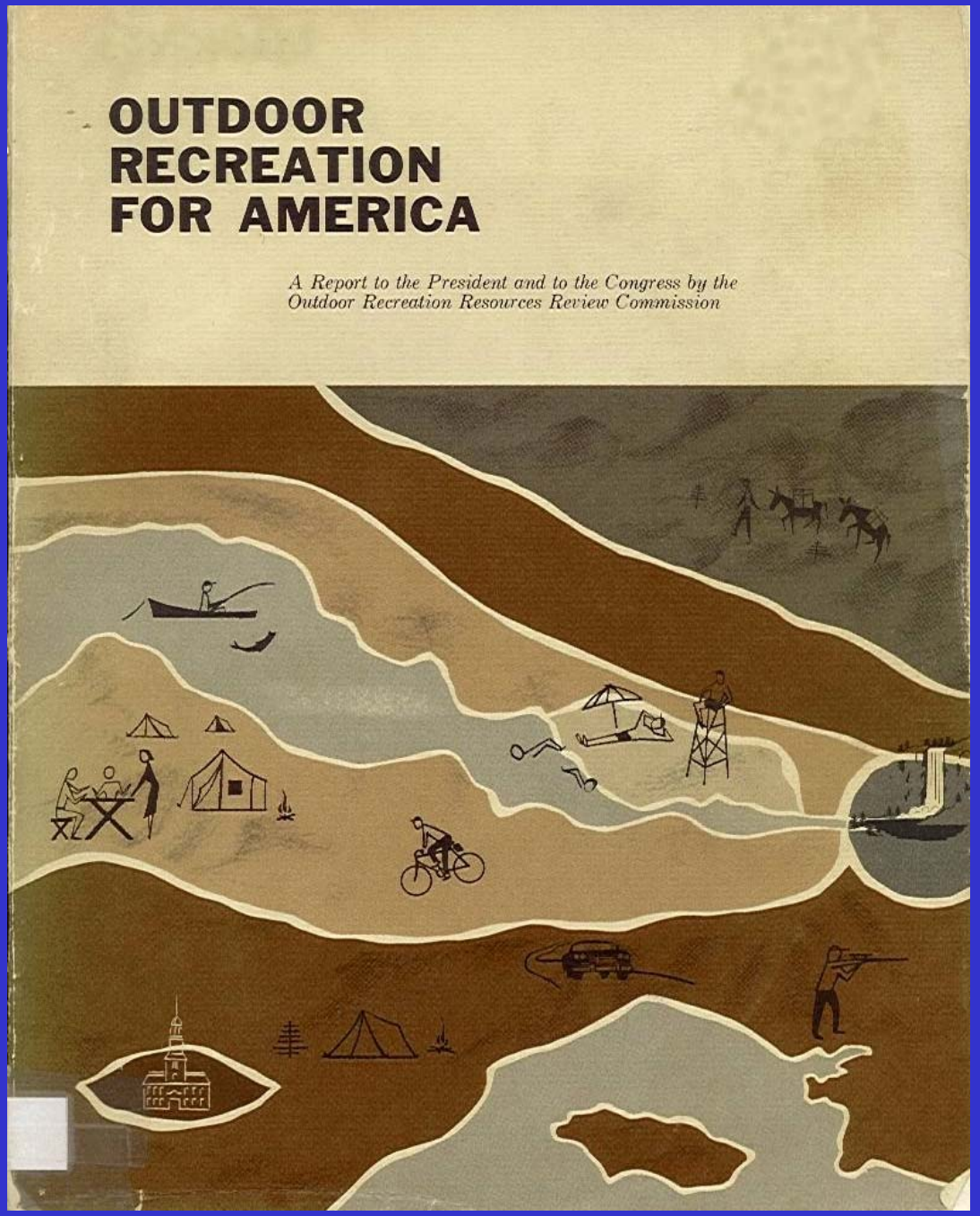
Absher studied and found valid the application of LAC in planning and management of wilderness and in capacity considerations on the Cumberland Island National Seashore (Absher 1989).

Large-scale Recreation Assessments

By Act of the United States's Congress, Public Law 85-470 established the Outdoor Recreation Resources Review Commission in 1958 (ORRRC 1962).

For the United States, the work of this Commission was the first comprehensive, national-scale assessment of outdoor recreation demand and supply.

The first major national assessment in the United States—The Outdoor Recreation Resources Review Commission (1960)

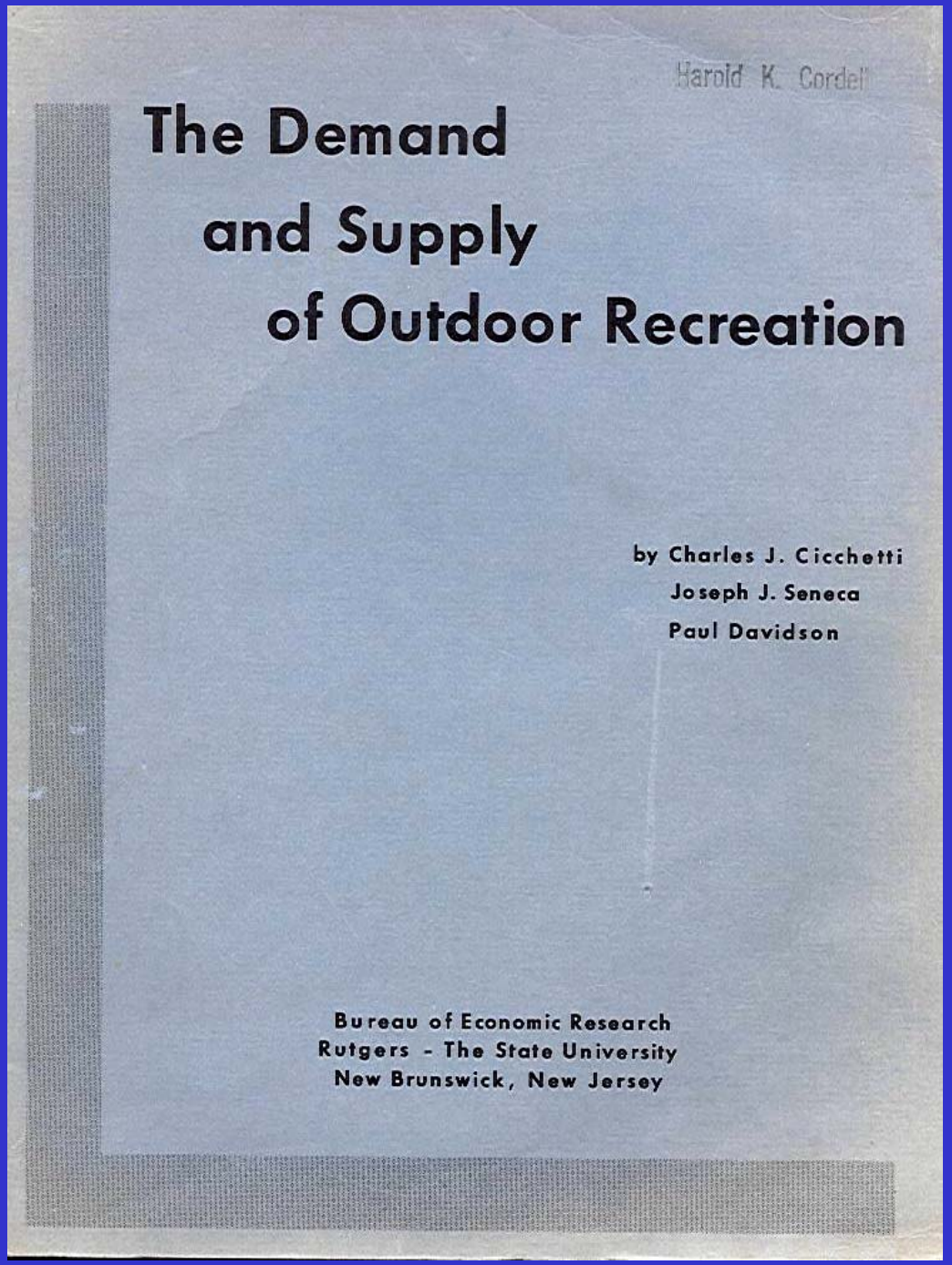


Several broad-scale assessments were to follow, many of which were done by recreation research scientists in the South.

From ORRRC's recommendations, a Bureau of Outdoor Recreation and the Land and Water Conservation Fund (LWCF) were created in the 1960s. To be eligible for matching grants from the LWCF, a state had to conduct and submit to the Bureau a Statewide Comprehensive Outdoor Recreation Plan (SCORP).

The Bureau and its successor agencies were also required to conduct and submit to the Congress a nationwide outdoor recreation plan. Both the state and national plans required comprehensive assessments, which were the source and inspiration for numerous state, regional and national participation surveys, supply studies, demand and needs analyses, and efforts to build forecasting models.

Some of the earliest broad-scale assessment research oriented toward the balance between demand and supply



Examples of some of the broad scale assessment research done at the state level in the South included:

Howard of Clemson University (1968) who did a statewide survey of outdoor recreation facilities for the state.

Siderelis at North Carolina State University conducted a modeling study to develop computerized (mainframe) techniques for forecasting recreation participation (Siderelis and Hassel, 1975).

Jarvis, et al, (1978) developed models and forecasts of recreation demand for the Upper Savannah River Basin in South Carolina.

Roggenbuck (1978) conducted the outdoor recreation needs assessment for the state of Virginia.

Senter and McLellan (1982) examined the compatibility of data used in state SCORPs to describe private recreation providers for use in statewide planning.

In the South, in 1977, the then named Southeastern Forest Experiment Station was assigned by Washington to conduct nationwide and region-by-region assessments of recreation demand and supply under the authority of the 1974 Forest and Rangeland Renewable Resources Planning Act. The first RPA Assessment Report was published in 1980.

Stemming from that work was publication of a follow-on national assessment report published by the American Forestry Association (Cordell and Hendee 1982).

Other sources where the Forest Service's Southern research unit published its regional and national outdoor recreation and wilderness assessment work included the Third Nationwide Outdoor Recreation Plan in 1979, the Rockefeller Outdoor Recreation Policy Review Group in 1983, reports by the President's Commission on Americans Outdoors in 1986, and proceedings of the 1988 national Outdoor Recreation Benchmark Symposium (Siehl 1989).

In the 1990s, statewide, subregional, Southern region and national assessment work has grown. The sophistication of this work has also improved.

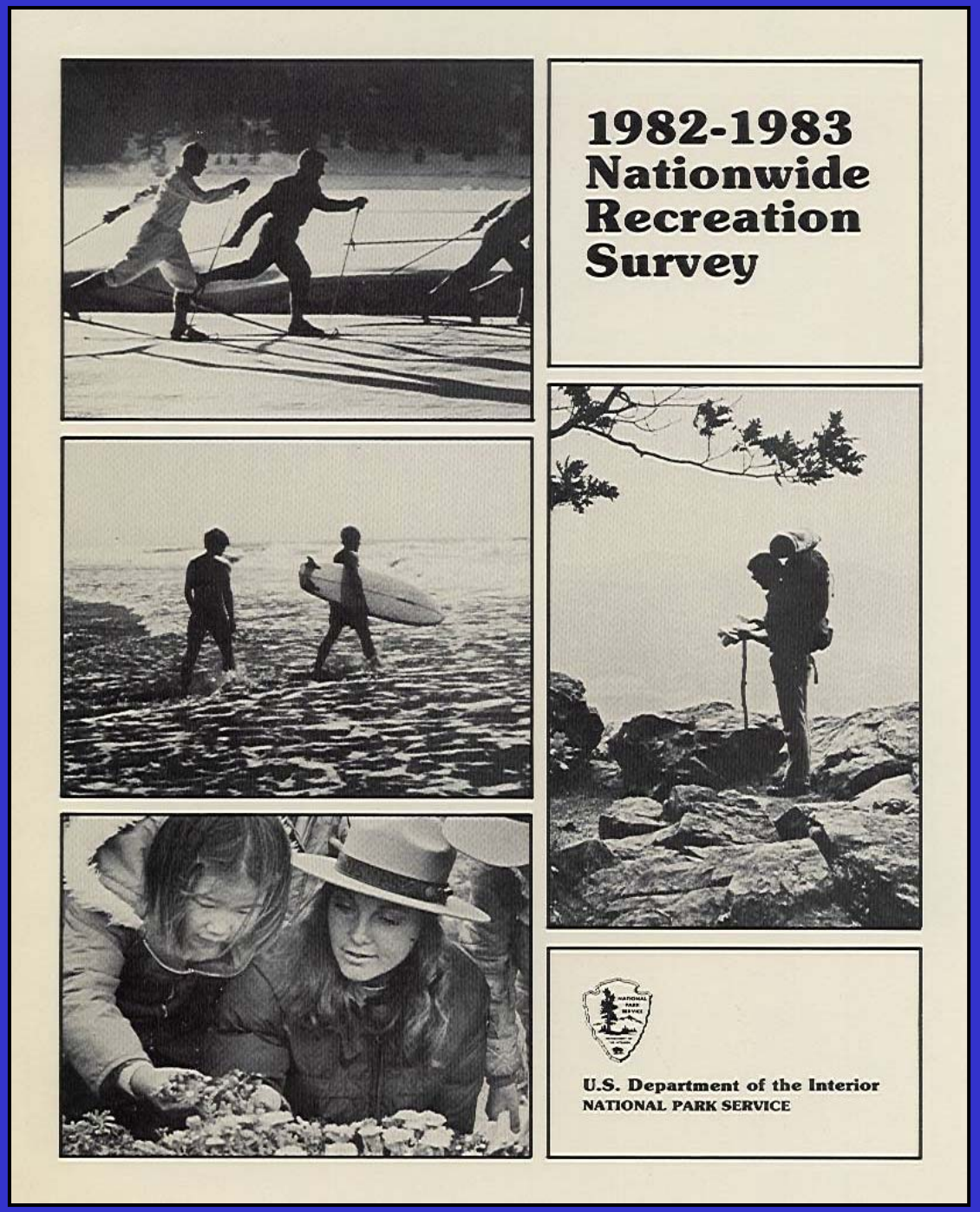
In 1996 results of an assessment for the Southern Appalachians was published.

In 1999, the third nationwide RPA Assessment of Outdoor Recreation and Wilderness was published.

In 2002, the Southern Forest Resources Assessment was published, including a southwide assessment of recreation demand and supply.

These and other component assessment research efforts over the last 2 1/2 decades have led to development of a system of data, models and reporting technologies that are used throughout the country and by many other countries around the world.

The first National Recreation Survey was conducted for ORRRC in 1960, others in 1965, 1972, 1977 and 1982-83 followed. Now the NRS series is managed by the Forest Service and called NSRE.



NSRE

NATIONAL SURVEY ON RECREATION AND THE ENVIRONMENT

SINCE 1960

THE UNITED STATES' ON-GOING NATIONAL RECREATION SURVEY

Additional recreation research topics of the 1980s

***Assessing economic impacts*--. In 1984, a national meeting was convened by Southern researchers to evaluate collective abilities at that time to adequately assess the economic impacts of recreation and tourism (Propst, et al 1985).**

From that meeting came an interagency coalition between the Forest Service, Corps of Engineers, the Tennessee Valley Authority, the National Park Service, the National Association of State Park Directors, as others, to develop state of the art technology.

The results from that meeting led to development of the Public Area Recreation Visitor Survey (PARVS) and an improved IMPLAN input-output economic accounting model.

***Wilderness Research.*--Cordell, Legg, and Cathey (1986) reported on visitor needs and user impacts in wilderness in the East.**

Watson, et al (1987) examined approaches and the usefulness of accurate wilderness use estimates, using some of the dispersed use methods described earlier.

Hartmann, et al (1987) conducted regional comparisons of Forest Service wilderness users with an emphasis on Eastern wilderness users and implications for policy and research.

Watson, et al (1989) studied visitor characteristics and preferences on three national forest wilderness areas in the South.

From these and other studies, much has been learned about wilderness use, wilderness visitors and wilderness management options.

***Private Land access.*--Little of the early research on private lands and owners focused specifically on the issue of public recreational use.**

Of the limited research then, prominent were studies of landowner liability (Kozlowski and Wright 1988 and Kaiser and Wright 1985) and access rights (Gramann, et al 1983).

Some studies examined the relationship between timber or other income-earning motives and recreation (e.g., Jones and Self 1991).

As part of the RPA national assessment of outdoor recreation, work was begun in the South cooperatively with Clemson University to develop a national data base on recreational use and access to private lands. The first resulting national survey to determine public outdoor recreation opportunities on nonindustrial private forest and range lands was conducted in 1975-1976 (Stevens and McLellan, 1984).

***Behaviors, perceptions and motivations*.--A significant number of scientists studying outdoor recreation in the South were/are trained in social psychology theory and methods. A more limited number are grounded in either sociology or economics.**

The makeup of studies of behaviors, perceptions and motivations reflects the disciplinary backgrounds of the scientists who conducted those studies.

An early and notable publication was written by Bryan (1974) concerning specialization among spring-stream fly fishermen.

Groves et al (1975) presented a multi-frame reference approach to studying and better understanding leisure motivations.

McLellan and Gahan (1976) studied recreation user characteristics and behaviors on Hartwell Reservoir in South Carolina.

Hull and Buhyoff (1982) reported on the effects of distance on the perception and rating of scenic beauty.

Wellman et al (1981) studied the accuracy of predictions by park managers of the motivations of visitors to two National Park Service areas.

Burrus-Bammel et al (1982) reported on a study of public perceptions of hunting and of hunters

Research in the 1990s

***Broad-Scale Assessments*.- In the 1990s, broad-scale assessment work continued, mostly stemming from the Forest Service's RPA assessment work, the third of which was reported in 1990.**

***Social Group Differences*.--The growing diversity of the population in the region prompted a number of social group difference studies, for example, recreation participation differences by race were studied by Brown (1993) and by Miles et al (1993).**

***Economic Studies*. As a follow on to the important work of the 1980s to improve data and models for economic impact research, a number of secondary economic effects studies were reported including Bergstrom et al (1990) looking at state parks and Clonts et al (1990) studying economic impacts of hunting. Other economic studies focused on demand for and valuation of outdoor recreation experiences and sites.**

***Motivations, perceptions and behaviors*.--Studying recreation use, users, motivations, perceptions and other aspects of outdoor participation and perceptions of the outdoors continued as an important topic in the 1990s. Hull (1990) studied mood as a product of leisure. Chilman et al (1990) reported on design of recreation monitoring systems using participant observers, Cornell (1990) examined family participation in developed camping, Patterson and Hammitt (1990) studied backcountry encounter norms**

***Methods*.--Studies were also progressing to develop research tools such as Chubb et al (1991) working on the use of geographic information system technology, Henderson (1991) working on use of qualitative data methods, Chilman, Vogel, and Conley (1991) developing approaches for monitoring off-road vehicle riding areas, Janiskee and Schmid (1991) inventorying rails-to-trails resources, and Siderelis (1991) developing optimal strategies for park operations.**

Also being reported were methods and theory advances for testing for homogeneity across waves of mail surveying by Choi, Ditton and Matlock (1992) and for testing the validity of photo-based scenic beauty judgements (Hull and Steward, 1992)

In the latter half of the 1990s, Tarrant and English (1996) estimated a crowding-based model of social carrying capacity, Siderelis and Perrygo (1996) applied the concept of recreation benefits to neighboring sites for assessing riparian rights. Overdevest et al (1997) operationalized place attachment through mapping and planning for place values on National Forests.

In the late 1990s Roggenbuck, Patterson, and Williams (1998) did a study at Juniper Prairie Wilderness in Florida about the nature meaning assigned to canoe trips there, using an heurmeneutic approach.

What Have We Accomplished?

- **In the beginning, problems of economic development in impoverished areas, use impacts on forest recreation sites and estimating recreation use were focal areas. Over the years, research and application have shown that for all three of these areas, we pretty much understand the problems and have provided tools and knowledge to address them.**
- **Research also has provided a pretty clear picture of who recreation visitors are, what they want to have and see, and how satisfied they are under different circumstances.**
- **We understand users' opinions about fees and how they might react to a variety of regulatory measures and information systems.**
- **We have done enough studies of crowded or environmentally sensitive sites to develop reasonably good principles to guide management within social, physical and ecological capacities.**

We Also Have

- **Provided assistance to planners, policy analysts, policy setters, legislators and private investors and business managers in better understanding broad-scale recreation demand, supply and social trends.**
- **Provided methods for and studies estimating the value of sites and site attributes contributing to outdoor recreation in the South.**
- **And, provided a continuous flow of new and improved concepts and methods for doing research--better and more realistic assumptions and better measurement scales.**

CHALLENGE NO. 1.—PUT TO OLD STUFF TO WORK

There is a wealth of research-based knowledge **on hand, concerning a variety of outdoor recreation topics and problem areas.**

Volume is estimated at roughly 6 to 8 times the number of recreation publications cited in the background paper for this presentation, i.e., 1,200 to 1,500 journal articles, proceedings articles, book chapters, books, etc

There is *a crying need* to synthesize, interpret and make more accessible our research findings. Managers, planners, business managers, and others in provider roles will not conduct literature reviews, nor read research papers.

Let us not kid ourselves. The most likely scenario with most research publications is that 3 peers read it in the beginning and 6 graduate students then read them during the 20 years after they are published. Okay, maybe 7 read it if we count the copy sent to mom.

A priority **in recreation research is to assemble, organize, study, interpret, and design a delivery system to better put our research to work.**

CHALLENGE NO. 2.—NEED SOME NEW STUFF

Outdoor recreation is not static. New problems arise, the face of the user changes, and the social and economic environment within which everything operates evolves. Research problem areas needing attention

•Inequities in access to forest recreation opportunities, public and private

•Greater diversity of users will assure the problem of conflict will only heighten in the future

•Impacts on natural lands will grow, especially on sensitive wildlife populations at certain times of the year, riparian areas, habitats for threatened and endangered plant and animal species, and fragile or pristine features of natural landscapes

•Site designs, management guidelines, information flows, and accommodations often times are not well matched to modern needs and expectations

•Information programs, interpretation, and conservation education need to be integrated and research is needed to guide that integration

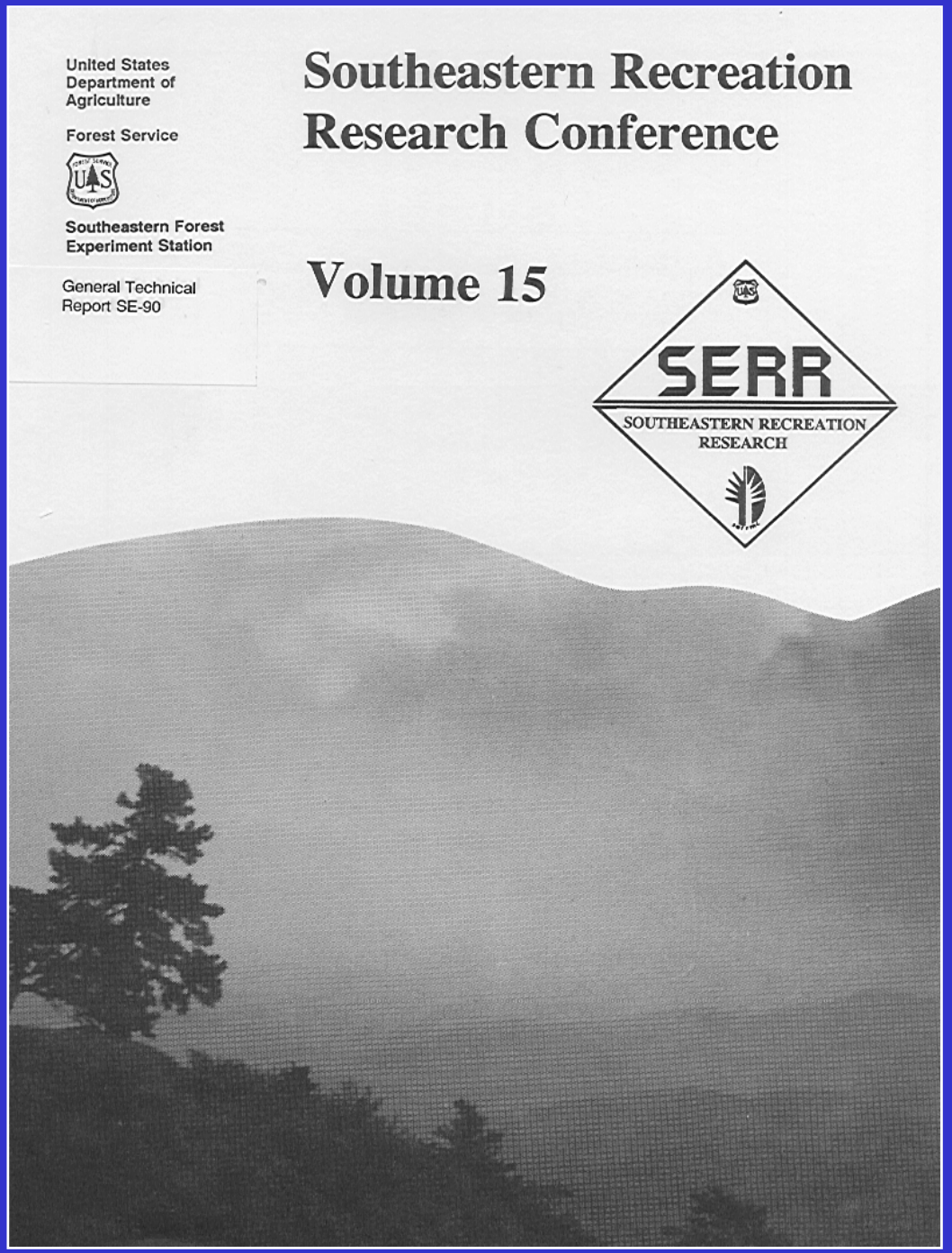
•Research regarding public attitudes and values associated with forests, forest management and forest recreation has not kept pace with these changes

•Simplified frameworks and procedures for planning, including accessing and using large demand and supply data bases, are needed.

•Increasing questions about the place of a National Wilderness Preservation System for this region, and nation.

•Highly focused research with minimal duplication and maximum partnering is needed.

A word about Proceedings from SERR---- Why did we stop publishing? Such a legacy! Let's get back into the habit. The Forest Service will help make it happen.



A HISTORY OF RECREATION RESEARCH IN THE SOUTHEAST

FROM THE LATE 1950s TO NOW